

# Nitocote EN901

High chemical resistant protective lining

## Uses

Nitocote EN901 is an Epoxy Novolac lining designed to provide protection to concrete and steel structures in aggressive chemical conditions. The material is particularly suitable in wastewater treatment plants, desalination plants, food processing plants, pump and paper mills, electric power plants, chemical manufacturing plants, fertiliser and insecticide plant sand petroleum refineries.

Nitocote EN901 may be used with or without Fosroc Anti-slip grains as a heavy-duty floor coating in applications such as chemical processing and drum storage areas, loading dock sand ramps. It may also be used in conjunction with glass fibre cloth to increase the thickness of the system or to reinforce structures subjected to aggressive chemicals.

## Advantages

- Nitocote EN901 is 100% solids, no solvents
- Nitocote EN901 exhibits excellent chemical resistance in pH ranging from 1-14 at 25°C
- Nitocote EN901 has excellent adhesion to properly prepared concrete, mild steel, and other substrates
- Nitocote EN901 has excellent abrasion resistance

## Description

Nitocote EN901 is a solvent free, highly crosslinked, highbuild epoxy-novolac-based coating. Nitocote EN901 is a two-part material and can be applied by brush, roller or airless spray. Nitocote EN901 is grey in colour. It is formulated to be applied in one or two coats to achieve a minimum total-dry-film thickness of 500 microns. Higher thickness can be specified.

## Specification

### Chemical and abrasion resistant lining

The chemical and abrasion resistant coating shall be Nitocote EN901, a high build, two-pack epoxy-novolac system specially designed to provide a tough and impermeable high chemical resistant film.

## Properties

**Solid content** :100%  
**Finish** :Gloss

**Colour** :Grey  
**Specific gravity** :1.35  
**Pot life** :45 min@ 23°C,20 min. @ 35°C  
**Tack-free time** :8-10 hours @ 23°C  
 4-6 hours @ 35°C  
**Overcoating time** :<16 hours @ 23°C  
 <10 hours @ 35°C  
**Full cure** :7 days @ 23°C5 days@ 35°C  
**Tensile strength** :30 Mpa  
**Elongation** :Approx. 3%  
**Flexural strength** :45 Mpa  
**Compressive strength** :95 Mpa  
**Hardness** :85+5 Shore D  
**Abrasion resistance (1 kg, H-22 Wheels)** :0.10 mg/cycle  
**Service temperature** :<60°C

## Chemical resistance

the following chemicals: The fully cured coating is resistant to the splash/spillage of

Acetic Acid 25%	Hydrazine 35%
Ammonium hydroxide*	Hydrochloric acid 35%
Benzene	Hydrofluoric acid 25%
Benzoyl chloride	Jet fuel
Benzyl alcohol	Isopropanol
Bleach (Sodium hypochlorite 5%)	Ethylene glycol monoethyl ether
Boric acid*	Kerosene
Brake fluid	Lactic acid 20%
Brine 20%	Methyl isobutyl ketone
Car oil	Mineral spirit
Carbon tetrachloride	Nicotinic acid*
Castor oil	Nitric acid 30%
Chromic acid 30%	Phenol 50% in IPA
Citric acid 50%	Phosphoric acid 85%
Crude oil	Potassium hydroxide*
Deionized water	Propylene glycol
Diesel fuel	Sea water
Diethanolamine 88%	Skydrol
Ethylene glycol	Sodium hydroxide*
Hydrogen peroxide 20% vol	Sulfanilic acid*
Fatty acids	Sulphuric acid
Formaldehyde 37%	Tartaric acid 50%
Gasoline	Toluene
Hexamine 25%	Vegetable oils
Hexane	Xylene

\*Any concentration in water

The local Fosroc office should be consulted for resistance to specific chemicals and conditions or when long term exposure is required.

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## .Instructions for use

### Preparation of concrete surfaces

All surfaces, which are to receive the lining, must be at least 28 days old and have a moisture content of less than 5%. The surfaces shall be dry, sound and free from debris and loose material. The substrate must be free from contamination such as oil, grease, wax, dirt or any other form of foreign matter which might affect adhesion. All blow holes and imperfections should be filled with Nitomortar FC\*†.

### Preparation of steel surfaces

All surfaces should be grit blasted to meet the requirements of BS4232, First Quality. The lining work should be programmed so that newly cleaned steel is coated as soon as possible before the formation of rust or scale.

### Priming

Nitocote EN901 is designed to be used without primer. However, if the condition of the concrete substrate requires priming, Nitoprime 25\* can be used.

### Mixing

It is imperative that the resin be thoroughly mixed with the hardener in the exact ratios to ensure optimum performance. Therefore, the entire contents of the hardener can should be added to the base container and mixed until a uniform colour and consistency are obtained, taking particular care to scrape the sides and bottom of the container. It is recommended that mechanical mixing be employed using a giffy mixer on a slow speed electric drill.

### Application

Once mixed, Nitocote EN901 should be immediately applied to the prepared surface ensuring a continuous coating of uniform thickness is obtained. Stiff nylon brush or short nap roller is recommended for such application. Faster rate of application is possible using airless spray equipment.

### Re-coating

To re-coat, it is imperative that the second coat be applied within the specified over-coating time.

### Use of glass fibre reinforcement

Nitocote EN901 may be used in conjunction with glass fibre cloth to increase the thickness of the system or,

where necessary, bridge fine cracks in the substrate. The cloth should be laid directly on the first coat whilst wet and should be pressed in and smoothed out with a split washer roller. A second coat should then be applied within the specified over-coating time.

### Use of Fosroc Anti-slip grains

Nitocote EN901 can be used in conjunction with Fosroc Antislip Grains\*† to provide a heavy-duty slip-resistant flooring system.

The first coat will be applied as described above with a minimum film thickness of 200 microns. The base coat should now be dressed with the chosen Fosroc Antislip Grains.

The recommended procedure is to completely blind the base coat i.e. apply excess dressing aggregate to completely obliterate the base coat.

When the base coat has reached initial cure, the excess Antislip Grains should be vacuum-cleaned from the surface.

The top coat can then be applied. Care should be taken to ensure that a continuous film is achieved and the surface is completely sealed.

### Cleaning

Nitocote EN901 should be removed from tools and equipment with Fosroc Solvent 102\* immediately after use. Cured material can only be removed mechanically.

### Limitations

- Substrate, ambient and product temperature must remain above 15°C during application and curing. Minimum material/container temperature for spray application is 20°C. Avoid moisture contamination.
- Nitoflor EN901 should not be applied on to surfaces known to, or likely to suffer from, rising dampness, potential osmosis problems or have a relative humidity greater than 75% as measured in accordance with BS 8203 Appendix A, or by a Hammond concrete/mortar moisture tester type COCO.
- Application should not be undertaken if the temperature is below 5°C, or is 5°C and falling, nor when the prevailing relative humidity exceeds 90%.
- Nitocote EN901 may not be colour stable when in contact with some chemicals. The colour change will not affect the performance of the protective system either on concrete or steel.

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## Technical support

Fosroc offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

## Estimating

### Supply

**Nitocote EN901** : 4 litre packs

**Fosroc Solvent 102** : 4 litre cans

### Coverage

**Nitocote EN901** : 0.5 litre /m<sup>2</sup> @ 500  
microns

**Nitoprime 25** : 4 - 5 m<sup>2</sup>/kg

Note: The coverage figure is theoretical - due to wastage factors and the variety and nature of substrates, practical coverage figures may be substantially reduced.

## Storage

When stored in dry air conditioned stores at temperatures between 15-30°C, in the original, unopened containers Nitocote EN901 will have a shelf life of 12 months. If stored at high temperatures the shelf life will be reduced. Air conditioned storage at high ambient temperatures is recommended.

## Precautions

### Health and safety

Nitocote EN901 and Fosroc Solvent 102 should not come in contact with skin and eyes, or be swallowed. Ensure adequate ventilation and avoid inhalation of vapour. If working in confined areas, then suitable respiratory equipment must be worn. Some people are sensitive to resins and solvents. Wear suitable protective clothing, gloves and eye/face protection. Barrier creams provide additional skin protection. Should accidental skin contact occur, remove immediately with a resin-removing cream, followed by soap and water. **Do not** use solvent. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately - **do not** induce vomiting.

### Fire

Fosroc Solvent 102 is flammable. Keep away from sources of ignition. No smoking. In the event of fire, extinguish with CO<sub>2</sub> or foam. Do not use a water jet.

### Flash points

**Fosroc Solvent 102:** 33°C

For further information, refer to the Product Material Safety Data Sheet.

For further information on any of the above, please consult your local Fosroc office - as below.

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## Additional Information

Fosroc manufactures a wide range of complementary products which include :

- waterproofing membranes & waterstops
- joint sealants & filler boards
- cementitious & epoxy grouts
- specialised flooring materials

Fosroc additionally offers a comprehensive package of products specifically designed for the repair and refurbishment of damaged concrete. Fosroc's 'Systematic Approach' to concrete repair features the following :

- hand-placed repair mortars
- spray grade repair mortars
- fluid micro-concretes
- chemically resistant epoxy mortars
- anti-carbonation/anti-chloride protective coatings
- chemical and abrasion resistant coatings

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